

SPECIFICATION AMENDMENTS

Replace paragraph [0008] with:

[0008] The diffuser downstream of the nozzle is shaped such that the area gradient starts out as a small positive value ~~up~~ and increases up to a maximum value and then drops off at the outlet of the diffuser where the flow path is nearly cylindrical in shape. A portion of the axial length of the largest diameter location for the diffuser portion has an area gradient near zero. In one embodiment, the diffuser portion extends pass the valve outlet flange and protrudes into the adjacent piping when installed.

Replace paragraph [0029] with:

[0029] The location of the inlet pipe 40 relative to the outlet pipe 54 is often constrained by industry standards. The inlet pipe 40 should be located as far as possible upstream of the nozzle throat 28 as measured along the nozzle and diffuser centerline axis to allow the flow to enter the nozzle area along the nozzle centerline. ~~The curvatures~~ curvature of the inlet flow path ~~in a manner to cause~~ causes the flow to be turned into the direction parallel to the nozzle centerline at a location upstream of the nozzle throat. Such curvature is useful in many embodiments and is not limited to valves having an orthogonal inlet pipe.

Replace paragraph [0033] with:

[0033] The shaping of the diffuser 48 to provide a small area gradient just downstream of the nozzle throat 28 causes the minimum inside diameter 29 (See FIG. 6) of the diffuser wall 46 to occur downstream of the nozzle throat. This feature allows a shorter stroke for valves that have a nearly linear flow rate increase per unit length when the valve needle 30 is extracted from the nozzle sleeve while maintaining a good critical pressure ratio at low valve openings.

Replace paragraph [0037] with:

[0037] The needle stem diameter in the area 60 upstream of the nearly cylindrical area ~~58~~ 56 is reduced. This reduction in stem diameter minimizes the vorticity of the flow that passes by the needle stem 62 and flows through the nozzle throat on the side opposite of

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the inlet flow piping. A tapered transition 68 is used between the stem diameter and the nearly cylindrical or slightly tapered area 56 to avoid flow separation.